CLAIMS

I claim:

1. A catalyst for removing arsenic from a petroleum fraction comprising a porous refractory support, at least 8 wt. % of a Group VIB metal selected from molybdenum and tungsten and an amount of a Group VIII metal selected from nickel and cobalt sufficient to result in an atomic ratio of the Group VIII metal to the Group VIB metal of between 1.5 and 2.5.

2. The catalyst of claim 1 wherein the porous refractory oxide is selected from alumina, alumina-silica, silica, titania, zirconia, boria, magnesia, zeolites and combinations thereof.

3. The catalyst of claim 1 wherein the porous refractory oxide is alumina.

4. The catalyst of claim 1 wherein the Group VIB metal is molybdenum and the Group VIII metal is nickel.

5. The catalyst of claim 1 wherein the Group VIB metal comprises between 8 wt. % and 14 wt. % molybdenum and the Group VIII metal comprises between 8 wt. % and 14 wt. % nickel.

6. The catalyst of claim 1 wherein the catalyst further comprises between 0.1 wt. % and 3 wt. % phosphorus.

7. The catalyst of claim 1 wherein the Group VIB metal comprises between 8 wt. % and 14 wt. % molybdenum and the Group VIII metal comprises between 8 wt. % and 14 wt. % nickel, and wherein the catalyst further comprises approximately 2 wt. % phosphorus.

8. A process for making a catalyst for removing arsenic from petroleum fractions comprising:
   a) impregnating a porous support with sufficient amount of a solution of a Group VIII metal compound selected from nickel and cobalt compounds such that the impregnated support comprises at least 8 wt. % Group VIII metal calculated as the

metal;

b) drying the impregnated support of step (a) and then calcining at a temperature of at least 427°C;

c) impregnating the product of step (b) with a solution comprising a Group VIB compound selected from molybdenum and tungsten compounds and, optionally, an additional amount of the Group VIII compound deposited in step (a), wherein the amount of Group VIB compound is such that the atomic ratio of all the Group VIII metal impregnated to the amount of Group VIB metal impregnated is between 1.5 and 2.5; and

d) drying and calcining the product of step (c), wherein said calcining is done at a temperature at least 30°C lower than the calcining performed in step (b).

9. The process of claim 8 wherein the Group VIII metal compound is at least one nickel compound.

10. The process of claim 8 wherein the Group VIII metal compound is at least one nickel compound and the Group VIB metal compound is at least one molybdenum compound.

11. The process of claim 8 wherein the Group VIII metal compound is a mixture of $Ni(NO_3)_2 \cdot 6H_2O$ and $NiCO_3$ and the Group VIB metal compound is a mixture of $(NH_4)_2Mo_2O_7$ and MoO_3.

12. The process of claim 8 wherein the amount of Group VIB compound is such that the atomic ratio of all the Group VIII metal impregnated to the amount of Group VIB metal impregnated is about 2.

13. The process of claim 8 wherein the solution used in step (c) further comprises phosphoric acid.

14. The process of claim 8 wherein the porous refractory support is alumina.

15. The process of claim 8 wherein the porous refractory support is alumina containing approximately 1 wt. % nickel.

16. The process of claim 8 wherein the porous refractory support is alumina, the Group VIII metal compound is a nickel compound, the Group VIB metal compound is a molybdenum compound, and wherein the amounts of nickel and molybdenum compounds impregnated on the support are such that the catalyst comprises between 8 wt. % and 14 wt. % molybdenum and between 8 wt. % and 14 wt. % nickel.

17. The process of claim 8 wherein the porous refractory support is alumina, the Group VIII metal compound is a nickel compound, the Group VIB metal compound is a molybdenum compound, the solution used in step (c) further comprises phosphoric acid, and wherein the amounts of nickel and molybdenum compounds and phosphoric acid impregnated on the support are such that the catalyst comprises between 8 wt. % and 14 wt. % molybdenum, between 8 wt. % and 14 wt. % nickel, and between 1 wt. % and 3 wt. % phosphorus.

18. A catalyst for arsenic removal made by the process of claim 8.

19. A process for removing arsenic from a petroleum fraction comprising contacting the fraction with the catalyst of Claim 1 at elevated temperature and elevated pressure in the presence of hydrogen.

20. The process of Claim 19 wherein said contacting is done in a plurality of fixed catalyst beds and the catalyst of Claim 1 is installed in the first of said beds.